

Chapter 5: Implementation and Funding

The Region 2000 serves as the residential home and provides the primary business, health service, education, commercial, cultural, and recreational services to approximately 240,000 (VEC, 2009) central Virginia residents. Within the geographic center of the larger approximate 2000 square mile district is the population and commercial CVMPO hub. The location of multiple resources within relative close proximity of the CVMPO area and the town and village center land use patterns within the rural areas presents a favorable environment to develop a comprehensive bicycle network that serves all the residents and visitors of Region 2000. This envisioned bicycle network, in partnership with the existing trail system, area sidewalks, and transit network, will combine to create a comprehensive alternative transportation network that meets the needs of transportation users of all ages, mobility needs, and economic status.

Implementing a Vision – An Action Agenda

The Region 2000 Bicycle Plan Steering Committee has worked collaboratively to develop an alternative transportation vision that enhances community resources through creation of a comprehensive bicycle network. Successful implementation of the system network, policy, and program recommendations will require time and coordination with area agencies and stakeholders. The resulting bicycle network will be positive community asset to area residents and visitors.

The following section provides an outline of the action strategies that should be undertaken over the next three years to ensure that the expressed vision, goal, and system recommendations presented with the CVMPO Bicycle Plan becomes a reality. The completion of the physical recommendations presented within this plan will take many years to implement but, it the formation of the foundation actions presented within the Action Plan that will ensure continued movement in realizing the long-term vision.

Adopt Plan

With approval from the primary funding agencies, VDOT and FHWA, this Plan should be presented and adopted by the Local Government Council and the CVMPO. With endorsement by these regional planning bodies, the CVMPO and Local Government Council should be certain recommendations presented within this plan are incorporated within all regional documents, most importantly, within the pending 2035 Long Range Transportation Plans.

The Region 2000 Bicycle Plan should also be presented to all the membership localities for the purpose of promoting approval or adoption. With approval, participating localities should incorporate the corridor visions and policy and program recommendations within Comprehensive Plans and other policy documents. Incorporation and approval of Plan recommendations is important in creating funding opportunities through most federal and state programs.

This Region 2000 Bicycle Plan has been developed to provide guidance for development of bicycle facility accommodations within the region. As such, this document has been developed as a resource to guide and facilitate specific corridor accommodations or bicycle planning at the locality planning level.

Establish Oversight Body

Establish the Region 2000 Greenway Advisory Committee as the oversight body or Bicycle Advisory Committee (BAC) within the Region 2000 area to promote and facilitate the development of bicycle accommodations and policies presented within this Plan.

The primary charge and goal of the bicycle oversight body will be:

- Serve as the bicycle technical advisory committee to the CVMPO and Virginia's Region 2000 Local Government Council;
- Serve as the regional body to generate local and community support for bicycle accommodation facilities within the Region 2000, CVMPO areas and participating localities;
- Establish educational and outreach activities that highlight the promotion of healthy communities and other outreach and educational opportunities associated with bicycling;
- Review progress of system, policy, and program recommendations on a yearly basis;
- Ensure that the system network is presented to area localities/internal departments and VDOT to ensure the ability to capitalize on any road improvements, resurfacing, or master plan developments;
- Establish a system to measure and record system progress;
- Update changes with the priority corridors should they arise; and
- Guide staff actions.

Develop a Bicycle Facility Design Standard and Accommodation Evaluation Manual

Develop a manual that provides a summation of design best practices and decision-making summary and signage use guidelines. This document will provide a quick and reliable reference for area staff, including planning and public works, and assure system unity design and guidance to area cyclist and motorist. While a large portion of the guide will be a condensed and quick guide of 2009 Edition of the MUTCD and AASHTO standards, the document will establish uniformity in signage, marking and accommodation decision standards throughout the region.

Ensure accurate and up-to-date information on repaving schedules within region

As a component of the activities undertaken by the program oversight organization, ensure partnership and close contact is maintained with VDOT residence and locality transportation departments to know maintenance schedules. The LGC should establish a GIS-based map that highlights locality paving schedules. This will ensure that all facility improvement opportunities are capitalized.

Host series of organized rides along priority routes

With approval of Plan, the oversight organization should work in partnership with area stakeholders to host several local short cycling events along priority routes to some key community resources. Work to establish as a yearly event for the purpose of highlighting progress and benefit of facility accommodations. Events should be planned to meet multiple level needs and comfort level and to take advantage of the current trail system to advertise the ability of this existing network to reach community destinations.

Secure Funding for Priority Project(s)

The oversight organization, in partnership with the participating localities and stakeholders, should work to secure funding to develop bicycle accommodations along priority accommodation roads that offer high impact improvements at minimal cost. Example would be recommendations along Rivermont Ave in Lynchburg.

Develop Interactive Map

Produce a user-friendly map that highlights the bicycle network. The map should have some interactive capabilities and allow for up-to-date changes in facility development. This interactive map should be housed within the Region 2000 website network.

Establish an Educational Campaign

Under the leadership of the Region 2000 Bicycle Steering Committee and area partners, such as the medical community, law enforcement, area running and cyclist clubs, local VDOT, and media sources, develop a public outreach campaign that provides basic bicycle safety information, proper cycling

use, the ability of cyclist to be on roads, and proper motorist approach to road cyclist. Valuable information to assist in development of education and outreach information is available through the Pedestrian and Bicycle Information Center website: <http://www.bicyclinginfo.org>. This site and numerous other bicycle planning and program sources are presented in **Appendix G**. The outreach campaign should include series of workshops to share with area citizens' information on transportation network decisions, opportunities for input into the process, and information on goals established through the regional bicycle network.

Increase establishment of bicycle support facilities at key community destinations

Through partnership with area businesses and foundations, create a bicycle rack instillation program. As noted there are very few bicycle parking opportunities at shopping and business destinations within the area. By establishing a bicycle rack program with area businesses and commercial centers, there will be an increased number of bike racks in the area and thus an increased opportunity for citizens to use bicycles as transportation vehicles and increased recognition that bicycles are transportation vehicles. There are a number of successful programs in both Virginia and North Carolina. A good example is a program hosted through the Roanoke Valley-Alleghany Regional Commission (information at <http://www.rvarc.org>).

Funding

Successful implementation of all aspects, from planning, development, education, and program marketing, of creating a safe and efficient bicycle network will require supportive local partners and stakeholders and multiple funding opportunities. From simpler activities such as signage instillation and education forums to complex coordination and construction activities associated with road width additions or restriping, funding is necessary. In both cases the ability to execute improvements will require partnership and incorporation into the standard funding framework within current public safety, streets and maintenance, parks and recreation, community development, and tourism plans. Further, partnerships with local non-profits, civic groups, and businesses will need to be established. Lastly, for those projects of considerable costs, such as trails or considerable corridor adjustments, utilization of external funding sources through federal and state program, in partnership with local funds will be necessary.

Membership jurisdictions and area stakeholders will have to rely on multiple funding sources that will include local, state, federal, and private funds to create the bicycle network. To best harness the full extent of funding and partnership opportunities, it is important to expand the connection of creating a bicycle network beyond transportation exclusively. The connection to public health, business and employment retention, potential water quality and hazard mitigation, education, and economic development must be established to expand funding partners. These additional program benefits can open additional funding opportunities and establish strong leverage and companion benefits that are vital in the competitive federal and state programs.

There are a number of potential funding sources within the federal, state, and local levels that can be utilized to implement planning and construction of pedestrian and bicycle facilities. Below is a summary of some of the more recognized funding sources that can potentially be utilized to implement pedestrian improvements. To access transportation funding at the state and federal level requires endorsement of the proposed transportation improvements within the regional transportation plan.

In the case of most transportation improvements within the CVMPO area, incorporation within the Transportation Improvement Program (TIP), a four-year program that includes project priorities and funding for projects, is required. Once adopted within the TIP a project is scheduled for implementation. Coordination and integration of projects within the CVMPO area into the TIP in an integral part of on-road bicycle facility development.

For all areas within Virginia the ability to increase road shoulder width by two feet (2 ft) within standard road maintenance or resurfacing does not require inclusion within the TIP or other state transportation planning and project document. As such, where appropriate road accommodations via wide shoulder can be achieved during general maintenance scheduling. To support the ability to add shoulder width during maintenance, VDOT currently allocates 2% of the road maintenance material allocation is dedicated to shoulder wedging along roadways. This presents a valuable opportunity for localities to facilitate bicycle accommodations along bicycle plan routes in coordination with general maintenance.

There are a number of potential grant funding sources available through federal and state agencies. While these grant programs are very competitive and represent limited funding, they represent funding avenues by which other partners, local agencies, non-profits, and local funding, can be expanded to make pedestrian improvements a reality. Further, a number of these grant opportunities are specifically geared toward the expansion and development of alternative transportation modes, enhancing public health, improving access to public transit, supporting movement of elderly, disabled, or low-income residents, or in the removal of safety hazards. Each of the site recommendations within this study should be evaluated for the ability to meet some of these funding agencies and program priorities.

Below highlights some of the more common funding opportunities. A comprehensive evaluation of funding opportunities available to Virginia jurisdictions titled, *Alternative Transportation Funding Sources Available to Virginia Localities*, developed by the Virginia Transportation Research Council in 2006 is provided in **Appendix H**.

Overview of Primary Federal and State Funding Sources

Surface Transportation Program (STP) Funds – These funds can be used for non-construction pedestrian projects such as map development or program brochures or facility construction. These funds may be used to provide sidewalk modifications for compliance with ADA. Funding is allocated at an 80 percent federal and 20 percent local match rate, and any approved project must be included within the MPO's Long Range Transportation Plan and the TIP.

VDOT Revenue Sharing Program (VDOT Grant Program) – This VDOT program, available to most Virginia localities, can provide up to \$ 1 million in matching funds, to construct, reconstruct, or improve roads within the approval VDOT roadway system. Localities request funds through a resolution and funds may used to implement the following activates:

- Deficits on completed construction, reconstruction, or improvement projects from the Six-Year Plan;
- Supplement funding from project listed on the Six-Year Plan;
- Construct, Reconstruct, or Improvements Projects not included with the Six-Year Plan but deemed worthy of submittal by an appropriate VDOT manager;
- Provide for improvements necessary for acceptance of specific subdivision street, such as widening or surface treatment;
- Provide paving for previously unpaved roadways in rural areas;
- Provide for new road facilities to be a part of the highway or road network in a locality that VDOT provides maintenance payments.

Revenue Sharing funds may not be used to supplement any work that is deemed to be general maintenance. Localities that do not maintain their own roads must submit a request through the county in which they are located.

Hazard Elimination Program Funds (Grant Program) – Provided as a portion of STP funds, this program provides funds for identifying and correcting hazardous locations and can include publicly owned bicycle or pedestrian pathways or trails and can be used to provide traffic calming measures and corrections at dangerous crossings.

Transportation Enhancement Program Funds (Grant Program) – Funds can be used to construct pedestrian facilities as well as develop educational and program activities related to transportation. These funds have been extremely beneficial throughout Virginia and represent the successful funding received by the Town to implement the sidewalk installation along South Main Street. These funds can be used to develop additional sidewalk improvements or on-road bicycle facilities noted within the Plan, the funds can also be used for off-road trails that provide alternative transportation to resources in the community.

Recreational Trail Program Funds (Grant Program) – These funds can be used to develop recreational trails. These grant funds might be an option for trail or pedestrian connections to future public spaces noted within the Downtown Economic Restructuring Plan & Physical Improvement Strategy or any future park or public space development envisioned by the Town.

Recreation Access Program (Grant Program) – The program provides pedestrian and bicycle access, via access road, sidewalk, or separate bicycle facility, to a public recreational facility or historic site operated by a governmental agency or locality or local authority. This program uses state funds only and has specific eligibility funding amounts depending on the type of access facility utilized. Again, as with the Recreational Trail Program Funds, the use of these funds would be dependent on the Town's future plans for recreational or public space development.

Safe Routes to School Program (Grant Program) – Funds can be used to provide non-construction funds to implement programs to get children walking or biking to school or walking in general or to provide construction improvements to schools that have implemented a Safe Routes to School program. Construction improvements can include development of sidewalks, signage, or crossing improvements. Program requires participation with a local school or school system. This program could provide some good opportunities to create safe walking and life style education opportunities for children that attend Amherst Elementary School. The school already has a well-constructed and functioning sidewalk system but lacks a current program to promote and foster use of the system. These funds could be used to implement the education and promotion activities.

Community Development Block Grant Program (Grant or Direct Allocation Program) – Funds are used to provide neighborhood revitalization, economic development, and facilities improvements to areas with a 51 percent incidence of low to moderate income individuals or a designed project eligible area. Several communities, including Greensboro, North Carolina, have used these funds to develop pedestrian travel to schools, shopping areas, and public transit stations. These funds would only be an option within the Town of Amherst on a small basis as the income and program limitations may preclude successful use.

Economic Development Grants for Public Works and Development of Facilities (Grant Program) – Administered through the US Department of Commerce, Economic Development Administration (EDA), funds can be used by designated localities for public works projects that can include trails and sidewalks facilities. Funds provided through the EDA are only available to localities and/or regional entities that have successfully completed a Comprehensive Economic Development Strategy (CEDS) that highlights the primary needs within a community and establishes a framework and prioritization of eliminating the identified needs. Program requires a 30 percent local match except in extremely distressed areas where the match can be reduced to 20 percent.

Bicycle Accommodation and Ancillary Facility Cost Estimates

The costs associated with the implementation of bicycle facilities, as can be expected, are dependant on a number of factors. Each of these factors can greatly impact the facility implementation costs. Some, but not all, of the factors impacting cost include:

- the accommodation type being utilized;
- the length of the corridor;

- the necessity for new construction or ability to utilize existing resource (such as restriping);
- the ability to utilize existing right-a-way or if additional acquisition is required;
- the ability to utilize existing locality staffing or is federal procurement and approvals; and
- the ability to utilize donated services or staff.

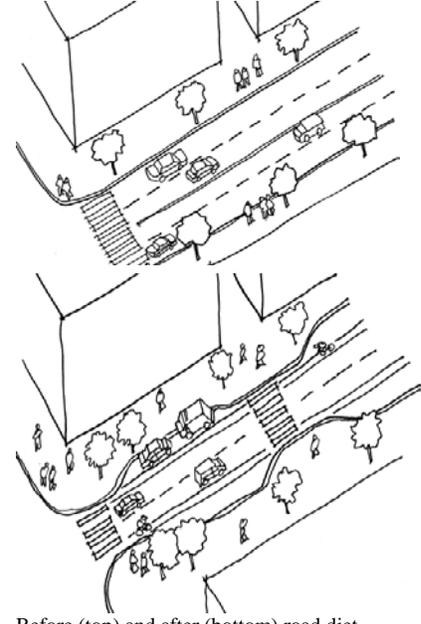
There are numerous documents that provide accommodation and ancillary resource cost estimates. In general, all accommodation types will require detailed engineering and cost estimates from a planner or engineer. However, there are numerous resources to assist in gaining preliminary costs estimates necessary for grant and partnership funding development. VDOT and the FHWA are just two of the many agencies that provide considerable information on facility costs. **Table 5.1** provides a summation of bicycle and pedestrian accommodation estimates provided from FHWA. Additional bicycle and pedestrian resource information is provided in **Appendix G**. It is important to note these are only estimates and that the resources of local planners and transportation staff will be extremely important in tailoring cost to unique local circumstances and opportunities.

Photo by Dan Burben; FHWA-SA-05-006



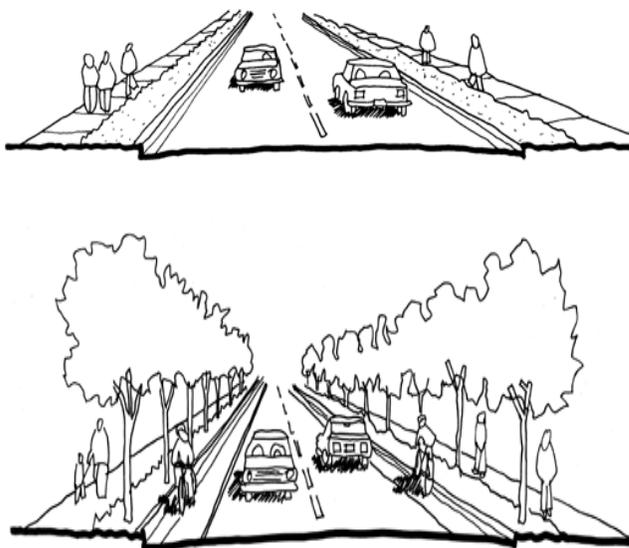
Lane reduction from two to one lane in each direction, bike lanes, and center turn lane.

Illustration by A.J. Silva; FHWA-SA-05-006



Before (top) and after (bottom) road diet.

Illustration by S. J. Silva; FHWA-SA-05-06



Before and after (bottom) width of lanes reduced.

Photo by Andy Clarke; FHWA-SA-05-006



Wide outside lane

**Table 5.1
Bicycle Facility Cost Estimates**

Accommodation Activity	Improvement Category	Estimated Costs	Cost Factors
Removal of Roadway Parking	Shared Roadway	Vary depending on restriping needs	Costs can vary depending on additions such as bulb outs or landscaping
Intersection Markings	Shared Roadway	\$1,500 - \$2,500 per intersection	Dependent on need to adjust traffic loops
Median/Crossing Island	Shared Roadway	\$15,000 - \$30,000 per 100 feet	Costs dependent on design, site conditions, and timing with other improvements
Reduce Number of Lanes – 4 lanes to one lane each way with center turn lane and bike lane	Shared Roadway	\$5,000 - \$20,000 per mile	Costs dependent on the amount of lanes that need to be repainted. Cost increase considerably if curb and gutter adjustments required (increase to \$100,000 per mile)
Reduce Lane Width – reduce width to 10 or 11 ft	Shared Roadway	\$1,000 per mile (no paint change); \$5,000 - \$10,000 per mile (restriping)	Cost dependent on what needs to be removed
Paved Shoulders	On-Road Facilities	\$44,000 per mile for 4 feet pavement	Costs vary widely depending of subservice and surface conditions
Bike Lanes	On-Road Facilities	\$5,000 - \$50,000 per mile	Costs dependent on road condition, need to remove and repaint lane lines, signal adjustment needs, and other factors. Least cost during resurfacing and configuration.
Wide Curb Lanes	On-Road Facilities	Estimated restriping costs \$3,470 per mile	Only costs associated with WCLs is for restriping the roadway.
Intersection Markings	Intersection Treatments	\$1,500 - \$2,500 per intersection	Dependent on need to adjust traffic loops
Signage	Intersection Treatments	\$30 - \$150 per sign; \$200 installation	Costs increase with use of electronic signage
Curb Radii Revisions	Intersection Treatments	\$5,000 - \$40,000 per curb	Dependent on site conditions
Raised Crosswalks	Traffic Calming	\$2,000 - \$15,000	Depending on drainage and material used and base road surface
Mini Traffic Circles	Traffic Calming	\$6,000 - \$12,000	Cost dependent on street surface (asphalt or concrete)
Chicanes (used to slow traffic)	Traffic Calming	\$10,000 - \$30,000 (set of three chicanes)	Cost varies dependent on road surface(asphalt or concrete) cost higher if drainage or utility adjustment
Curb Extensions	Traffic Calming	\$2,000 – \$20,000 per corner	Costs dependent on design and site conditions. Drainage often a key design and cost factor.
Shared Use Path/Trail	Multi-use Facility	Average \$250,000 per mile; costs have been up to \$1,000,000 per mile	Cost vary considerably based on topography, surface treatment, access and easement needs, etc.
Traffic Signals/Timing Controls	Marking, Signs, and Signal	\$30,000 - \$140,000	Number, access to current electric system, and other design considerations
Bike-Activated Signal	Marking, Signs, and Signals	Comparable to standard traffic signals	Cost vary depending on size and complexity of intersection
Pavement Markings (such as Sharrow)	Markings, Signs, and Signals	\$100 per application (includes labor and materials) for methyl methacrylate material	Costs of other materials will vary
Signage	Marking, Signs, and Signals	\$30 - \$150 per sign; \$200 installation	Costs increase with use of electronic signage
Bike Racks	Support Facilities	\$50 - \$100 per bike	Costs can vary depending on visual esthetics
Bike Lockers	Support Facilities	\$500 - \$1,500	Valuable resource for transit and long-term destination points
Sidewalks	Pedestrian Facility	Concrete sidewalk and curbing: \$15/linear foot curbing; \$11/square foot for sidewalk	Costs vary depending on existing surface, grade, and right-a-way availability
Curb Ramps	Pedestrian Facility	\$800 - \$1,500/ramp	Costs dependent on new or retrofitted
Crosswalks	Pedestrian Facility	\$100 - \$3,000/crosswalk	Cost dependent on style and surface, \$100 for regular; \$300 for ladder style, \$3,000 for stamped/patterned concrete
Speed-Monitoring Trailer	Encouragement, Education	\$10,000 - \$15,000 to purchase	Cost of moving also a factor, option to partner and use local agency device
Pedestrian & Driver Education	Encouragement, Education	Costs vary depending on methods	Lots of information and technical assistance
Police Enforcement	Encouragement, Education	Cost vary depending on methods	Opportunity to partner with existing programs

Source: *Bikesafe: Bicycle Countermeasure Selection System*; US Department of Transportation, Federal Highway Administration, 2006. FHWA-SA-05-006

Pedsafe: Pedestrian Safety Guide and Countermeasure Selection System; US Department of Transportation, Federal Highway Administration, 2004. FHWA-SA-04-003

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